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INSECTS IN RELATION  
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INTRODUCTION

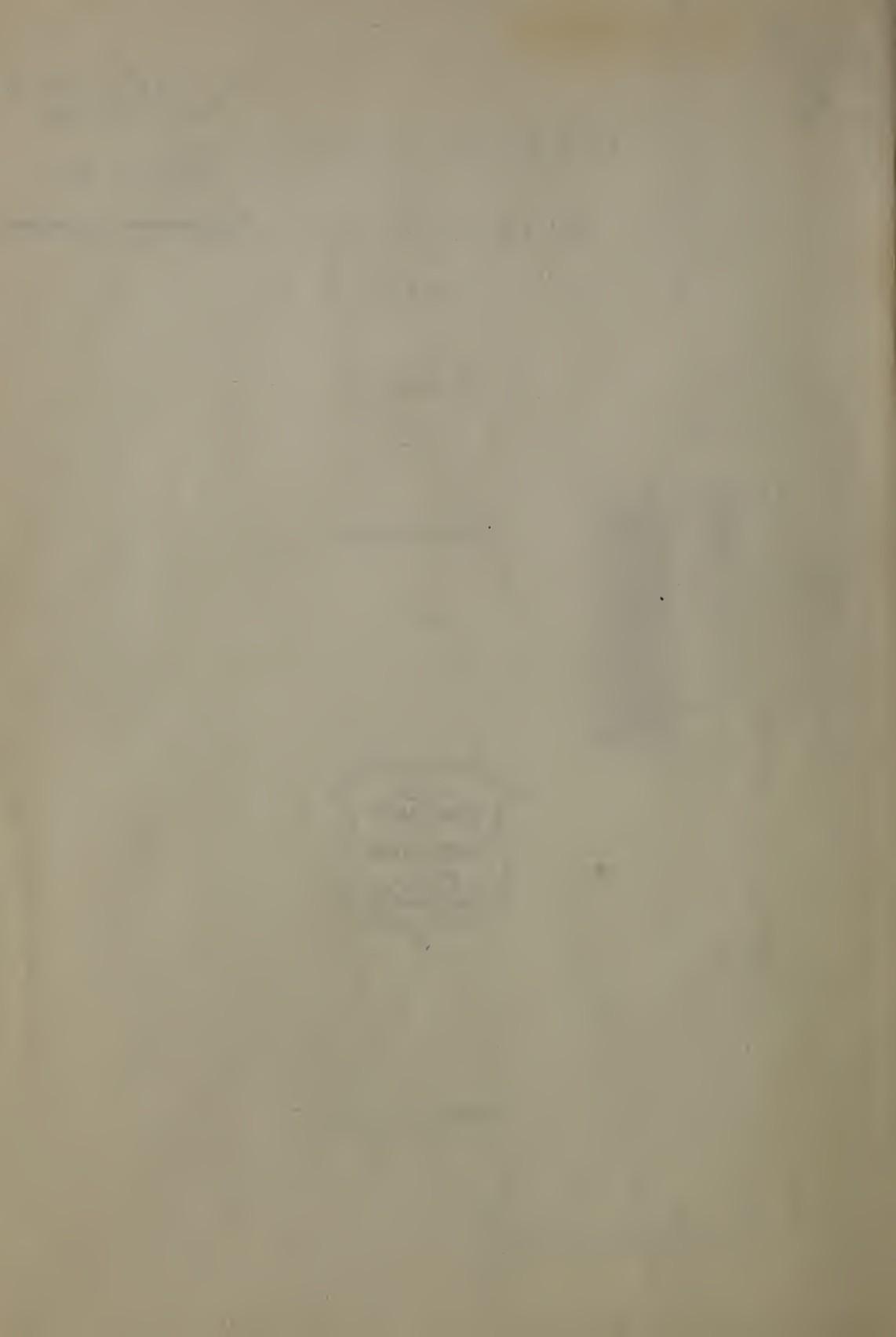
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INSECTS IN RELATION

TO

NATIONAL DEFENSE

Circular 1 - Introduction

Insects are of vital importance in relation to national defense. Those which act as carriers of disease or attack and annoy man and animals reduce their efficiency. Those which feed on and breed in food supplies and fabrics or damage wood, destroy necessary materials. The concentration of large numbers of men and large quantities of supplies and materials creates conditions which greatly increase the hazard from insect injury. Therefore, the application of preventive measures is an important and necessary part of National Defense.

The Bureau of Entomology and Plant Quarantine of the U. S. Department of Agriculture has available publications dealing with many of the insect problems that concern man, livestock, supplies of food and clothing, building and other materials. These were, however, designed mainly to serve the farming, livestock, food and lumbering industries and home owners but do not specifically apply to insect problems in relation to National Defense. The Bureau, therefore, has prepared a series of circulars giving pertinent information regarding the more important insects that may be encountered in national defense activities and methods of preventing their injury. Should more detailed information on these or other insects be desired that which is available will be furnished.

The Bureau of Entomology and Plant Quarantine is in a position to lend assistance to Defense agencies in diagnosing their insect problems. To combat an insect effectively it is essential that the kind be definitely known and that its life-history be understood. It is not enough to know only that mosquitoes are present in a certain area. Correct identification of the species concerned must first be made before information can be

supplied as to whether or not they are disease-carriers, their probable breeding places, and the means used to secure control.

Much of the hazard of insect-borne diseases can be avoided by foresight in the location of camps and cantonments, since disease-carrying insects are not equally abundant in all parts of the country or in all localities. In general, camp sites should be chosen where the ground is naturally well drained and away from swampy areas and river bottoms subject to overflow, but if there is need for locations in proximity to sources of mosquitoes and flies, then preventive measures are necessary.

Structural timbers of wooden buildings are often subject to serious damage within a few months due to hidden feeding by termites. Such damage can be avoided by proper termite proofing, involving the use of practical construction methods.

Tool and implement handles, unfinished gun stocks and other products made of sapwood from certain hardwood trees are subject to severe damage by powder-post beetles. Such damage can be avoided by proper selection, inspection, treatment and storage of susceptible products.

Warehouse and store-room construction should provide for thorough and easy sanitation for the control of insects attacking food products, woolens and leather goods. Adequate fumigation facilities should also be provided. Food supplies such as flour, cereals, crackers, beans, peas and dried fruits are liable to infestation by various moths and weevils. Woolen clothing and blankets may be attacked by several kinds of "moths." Cured meats and cheese serve as food for certain kinds of maggots, mites and beetles unless protected from infestation. Wherever possible refrigerated storage should be provided for the protection of susceptible foods.

The effective screening of buildings to prevent the entrance of mosquitoes and flies is a measure of first importance in camps and cantonments. In addition to the common housefly there are other kinds of flies of the biting type, such as the stable fly and the sand fly, against which control measures at the source of infestation may become necessary.

Ticks, lice, fleas and chiggers are important pests of man which can be avoided or controlled. Cockroaches, bedbugs, and ants frequently become very troublesome if not promptly dealt with. Horses and mules are subject to the attack of a number of pests that interfere with their condition and efficiency and which can be controlled by special medication and precautionary measures.

Devices and insecticides for controlling insects differ greatly in kind and effectiveness. The type of sprayer, dust gun or other applicator is important. The active ingredients in insecticides must be of the right kind and specifications for their procurement and use have direct bearing on results that may be secured. Where and how devices and insecticides may be secured often determines whether control measures will be used at the proper time.

While the various circulars which the Bureau of Entomology and Plant Quarantine has prepared are complete in themselves as to subject matter, they all follow a general plan which permits suitable indexing and cross reference. These circulars are offered for the information of all agencies of the Government having supervision of and responsibility for the purchase and care of supplies, and the location, construction, maintenance and sanitation of camps, cantonments and other facilities in connection with National Defense.

This series includes 23 circulars on insects having direct relation to National Defense and does not consider the relation of insects to the production of foodstuff and supplies. A list of the subject and number assigned each circular follows:

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